



FIRE WEATHER ANNUAL OPERATING PLAN

FOR

WESTERN & NORTH-CENTRAL NEW YORK

**NATIONAL WEATHER SERVICE
BUFFALO, NY**

2017

(Updated 2/2/2017)

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Introduction

This document serves as the Interagency Fire Weather Annual Operating Plan (AOP) for western and north-central New York. The AOP provides specific procedural and policy information regarding the delivery of meteorological services to the fire management community as allowed under the umbrella of the National Interagency Agreement for Meteorological Services found at http://www.nwcg.gov/teams/ibpwt/documents/cooprelations/ia_nws.pdf

Format and content of this AOP is set forth by NWS Instruction 10-404. <http://www.nws.noaa.gov/directives/sym/pd01004004curr.pdf>

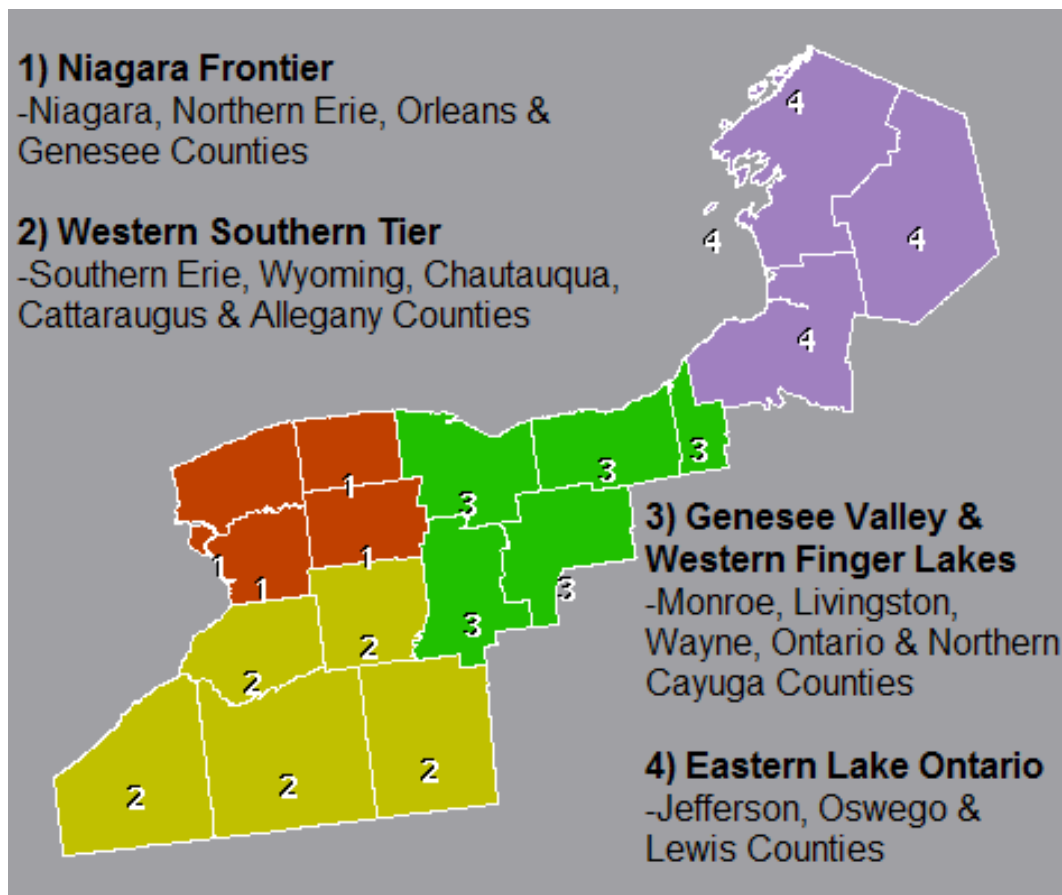
In addition to highlighting products and services provided by the NWS to users, this AOP also covers responsibilities expected from users to assist the NWS and joint responsibilities as well as specific goals the NWS Buffalo plans to achieve to continue advancing the program for its users. Forecast products and services are only highlighted in this AOP. More detailed information and examples can be found in the NWS Buffalo Fire Weather Product and Service Guide.

NWS Buffalo Fire Weather Program

The NWS Buffalo Fire Weather Program provides forecast and warning services in support of fire management and control operations, leading to the effective prevention, suppression, and management of forest and rangeland fires. The major objective of the fire weather program is to provide a service which will meet the meteorological requirements of federal and state wildland management agencies in the protection and enhancement of the nation's forests and rangelands.

The National Weather Service Buffalo agrees to furnish routine forecasts and warnings according to the needs of the fire weather community throughout the entire year although the typical fire weather season for western and north-central New York starts in mid-March and continues through mid-November.

The coverage area for the NWS Buffalo fire weather program is western and north-central New York which is broken down into the following four fire weather zones.



Fire Weather Program Goals

The NWS Buffalo Fire Weather Program Leader will continually set goals to expand and enhance the fire weather program and its service to meet to needs of the fire management community.

2017 Program Goals

- Continue to conduct outreach to build and expand the number of core fire weather partners and usage of NWS Fire Weather products and services
- Hold an annual fire weather users meeting and AOP review each year near the beginning of the fire season to strengthen partner relationships, address local concerns and review current policy
- Assemble a Fire weather climatology to increase forecaster pattern recognition of setups which produce Red Flag conditions
- Continually maintain the NWS Buffalo Fire Weather Webpage per user feedback
- Conduct an annual internal Fire Weather Drill to keep forecast staff familiar with local policy, updated forecast methods and user feedback
- Improve verification statistics of Red Flag Warnings

Organizational Directory

Federal Partners

National Interagency Fire Center
3833 S. Development Ave
Boise, ID 83705-5354

Eastern Area Coordination Center
Manager (NPS)
626 E. Wisconsin Ave., Suite 500
Milwaukee, WI 53202

Dept. of Interior, U.S. Fish and Wildlife Service
Iroquois National Wildlife Refuge
Wildlife Biologist
1101 Casey Road
Basom, NY 14013

Wallkill National Wildlife Refuge
Forestry Tech - NY, NJ, PA, MD, DE
1547 CR 565
Sussex, NJ 07461

Fort Drum Fire & Emergency Services Division
Fire Prevention & Training Branches
P-1585 Ontario Avenue
Fort Drum, NY 13602

State Partners

New York State Dept. of Environmental Conservation
Division of Forest Protection
State Forest Rangers
Asst. Director of Forest Rangers & Em. Mgmt.
625 Broadway 3rd Floor
Albany, NY 12233-0001

DEC Wildfire Predictive Services
625 Broadway 3rd Floor
Albany, NY 12233-0001

NYS DEC Region 6 (Jefferson, Lewis Co)
Forest Ranger Captain
317 Washington Street
Watertown, NY 13601

NYS DEC Region 7 (Oswego, N. Cayuga Co)
Forest Ranger Captain
2715 State Route 80
Sherburne, NY 13460

NYS DEC Region 8 (Orleans, Monroe, Wayne, Genesee, Livingston, Ontario Co)
Forest Ranger Captain
182 E. Union Street
Allegany, NY 14706

NYS DEC Region 9 (Niagara, Erie, Wyoming, Chautauqua, Cattaraugus, Allegany Co)
Forest Ranger Captain
182 E. Union Street
Allegany, NY 14706

NYS Division of Homeland Security and Emergency Services
Office of Fire Prevention and Control
Buffalo Regional Office
(Erie, Niagara, Orleans, Genesee, Wyoming, Monroe, Livingston, Ontario, Chautauqua,
Cattaraugus, Allegany Co)
Deputy Chief Inspections and Investigations Branch

Fire Protection Specialist
535 Washington Street Suite 106
Buffalo, NY 14203

NYS Division of Homeland Security and Emergency Services
Office of Fire Prevention and Control
Syracuse Regional Office
Deputy Chief Inspections and Investigations Branch

National Weather Service (NY Offices)

Weather Forecast Office (WFO) Albany, NY
NY State Liaison Office
Fire Weather Focal Point
251 Fuller Road, B300
Albany, NY 12203-3640
518-435-9580

WFO Buffalo, NY
Fire Weather Focal Point
587 Aero Drive

Buffalo, NY 14225
716-565-0204
WFO Binghamton, NY
Fire Weather Focal Point
32 Dawes Drive
Johnson City, NY 13790
607-729-1597

WFO Burlington, VT (Northern NY)
Fire Weather Focal Point
Burlington Int'l Airport
1200 Airport Drive
South Burlington, VT 05403
802-862-2475

WFO Upton, NY (Long Island)
Fire Weather Focal Point
175 Brookhaven Ave.
Upton, NY 11973
631-924-0157

NWS Eastern Regional Headquarters

Regional Fire Weather Coordinator
Airport Corporate Center
630 Johnson Ave.
Bohemia, NY 11716

NWS National Fire Weather Program

National Fire Weather Operations Coordinator
3833 South Development Ave., Bldg. 3807
Boise, ID 83705

Services Provided by the NWS

Basic Services

Digital Forecasts and Services

The following links connect users to local and national fire weather webpages as well as alternative forecast products which can be used for planning purposes beyond the range of the Fire Weather Planning Forecast. A 24/7 chat link is also included.

- NWSchat – Chat with NWS Buffalo staff 24/7 in the “bufchat” chatroom
<https://nwschat.weather.gov/>
- NWS Buffalo Fire Weather webpage
<http://www.weather.gov/buf/FireWeather>
- NWS National Fire Weather webpage
<http://weather.gov/fire/>
- National Digital Forecast Database (NDFD) fire weather graphical forecast
<http://graphical.weather.gov/sectors/bufFireDay.php#tabs>
- Hourly Weather Graphs:
<http://forecast.weather.gov/gridpoint.php?site=buf&TypeDefault=graphical>
- Weather Activity Planner:
<http://forecast.weather.gov/wxplanner.php?site=buf>
- Point Forecast Matrix:
<http://forecast.weather.gov/product.php?site=BUF&product=PFM&issuedby=BUF>

Fire Weather Planning Forecast (FWF)

The Fire Weather Planning Forecast is a zone-type product used primarily for input in decision-making related to pre-suppression and other planning. Weather parameters represent average conditions across each of our 4 fire weather zones covering the next 36 hours. A more general extended forecast out to 7 days is included near the bottom and finally an 8-14 day temperature and precipitation outlook for the region follows at the bottom. The forecast is issued **every three hours** during the fire weather season with start/end dates that are coordinated with NY DEC Forest Rangers and other partners. The more frequent forecast issuances were implemented to align the FWF with the Enhanced Short Term Forecast initiative. During the winter month the FWF will

be suspended but fire weather data will still be available via the hourly weather graph on weather.gov.

The NWS Buffalo Fire Weather Planning Forecast can be found here:

<http://forecast.weather.gov/product.php?site=buf&product=FWF&issuedby=BUF>

Red Flag Program

The NWS Buffalo will monitor forecast trends for critical weather conditions that support extreme fire behavior and coordinate with fire weather partners in determining status of fuel moisture for issuance of Fire Weather Watches and Red Flag Warnings. The purpose of the Red Flag Program is to alert land management agencies to developing weather conditions that, when coupled with critically dry wildland fuels, could lead to dangerous fires.

Coordination will be made between NWS Buffalo and NYSDEC, Iroquois NWR and Eastern GACC before issuance of a Fire Weather Watch or Red Flag Warning is issued.

Fire Weather Watch

A Fire Weather Watch is issued to indicate the potential for dangerous fire weather conditions. Usually fire danger is in the very high to extreme category. Once forecast confidence of meeting criteria reaches 50% a watch will be issued 12 to 48 hours before the onset of the critical weather conditions. The overall intent of a Fire Weather Watch is to alert users at least a day in advance for purposes of resource allocation and firefighter safety.

Red Flag Warning (RFW)

A Red Flag Warning is issued once forecast confidence reaches 80% and coordination is made with partner agencies. The warning indicates the imminent danger of severe fire weather with a relatively high probability of occurrence. Usually the fire danger is in the very high to extreme category. A Red Flag Warning will normally be issued for potential severe fire weather events in less than 12 hours. A Red Flag Warning may or may not be preceded by a Fire Weather Watch.

Current Fire Weather Watches and Red Flag Warnings can be found here:

<http://forecast.weather.gov/product.php?site=buf&product=RFW&issuedby=BUF>

Red Flag Criteria

WFO Buffalo will use the following sets of criteria to determine when a Fire Weather Watch or Red Flag Warning will be issued for particular zones. There are two different

criteria based primarily upon the season. All factors within each vegetative stage must be met in order to have a Red Flag Event.

When in Vegetative Stage I & II (cured & transition – Winter/Spring/Fall)

- Winds sustained or with frequent gusts above 25 mph
- Relative Humidity at or below 30%
- Rainfall amounts for the previous 5 days of less than 0.25 inches

When in Vegetative Stage III (green - Summer)

- Winds sustained or with frequent gusts above 25 mph
- Relative Humidity at or below 30%
- Rainfall amounts for the previous 8 days of less than 0.25 inches
- Keetch-Byram Drought Index values of 300 or greater

See <http://www.wfas.net/images/firedanger/kbdi.png>

It is the user's responsibility to inform the NWS of the current stage (I, II or III) and when measured KBDI is approaching 300, over 300, and falls back below 300. With no input from the users on these parameters, the NWS will assume climatological timing for various stages.

Stage I cured – 75% or more dead

Stage II transition – 25% to 75% dead

Stage III green – less than 25% dead

During the winter the stage will be cured. Transition will occur 2 to 4 weeks after the last freeze. After about 30 days the stage will be green. The process will work backwards starting with the first freeze of fall. The average last frost in spring ranges from the 1st half of April along the lake shores to late May across the interior western Southern Tier and Tug Hill. The average first frost in fall ranges from the first half of September across the interior western Southern Tier to the second half of October along the lake shores.

As part of the warning decision making process, forecasters are encouraged to consider atmospheric stability parameters (Hanes Index), temperature anomalies, mixing heights, and even cloud cover when determining the issuance of a Fire Weather Watch or Red Flag Warning – especially under low-end critical conditions and in the absence or critical fire weather patterns.

Warning Verification

After a Red Flag Event, Warnings will be verified on a county-by-county basis. Local weather observing networks will be checked to determine if wind speeds and relative humidity values reached critical levels outlined in the following Red Flag Criteria section. Verification statistics will be calculated for Probability of Detection, False Alarm Rate, Critical Success Index and Lead Time for each Red Flag Event and forwarded to NWS National and Regional Headquarters at the end of each year.

Special Weather Statement

It is office policy, based on conversations with various users, to refrain from issuing statements for “High or Extreme Fire Danger” conditions. The Fire Danger is calculated and posted each day at many or most state and national parks. Their determination is based on their local measurements, leaning heavily toward fuel moistures, which is information for which the National Weather Service is not responsible.

Media inquiries concerning the specific fire danger should be directed to the office of NYS Department of Environmental Conservation or the NYS State Forest Ranger District Offices. However, on rare occasions during extreme events, users of the Fire Weather products may request that we “help get the word out” about the fire danger. In these rare cases, the Senior Forecaster may decide to issue a Special Weather Statement (BUFSPSBUF). This statement would incorporate the information provided by the fire weather community.

The most recent Special Weather Statement can be found here:

<http://forecast.weather.gov/product.php?site=buf&product=SPS&issuedby=BUF>

Fire Weather Area Forecast Discussion

The Area Forecast Discussion (AFD) focuses on the most significant weather issues affecting an NWS office’s forecast area over the next seven days. During heightened fire activity, a fire weather section (.FIRE WEATHER...) will be included in the AFD containing weather information of interest to fire managers.

The most recent Area Forecast Discussion can be found here:

<http://forecast.weather.gov/product.php?site=buf&product=AFD&issuedby=BUF>

Site-Specific Weather Forecasts

NFDRS Point Forecasts (FWM)

The National Fire Danger Rating System (NFDRS) measures wildfire danger. The NWS role in NFDRS is forecasting weather parameters for input into WIMS which predicts the next day's fire danger index. NWS Buffalo issues this forecast at 446 PM each day for the following two Remote Automatic Weather Stations (RAWS) sites in our forecast area:

301101 ABMN6 – Iroquois National Wildlife Refuge, Basom, NY (Genesee County)
Elevation: 628 ft. Lat/Lon 43.112861, -78.404306
Owner: Dept. of Interior, FWS

300491 LWLN6 – NYSDEC Lowville Demonstration Area, Lowville, NY (Lewis County)
Elevation: 740 ft. Lat/Lon 43.809722, -75.473333
Owner: NYSDEC Div of Forest Protection

The Fire Weather Matrix (FWM) Forecast can be found at the following link. Information on how to decode the FWM is included in the NWS Buffalo Product & Service Guide.

<http://forecast.weather.gov/product.php?site=buf&product=FWM&issuedby=BUF>

Spot Forecast (FWS)

Site-specific (spot) forecasts are localized near-term forecasts issued by the NWS in support of wildfire and natural resource management. These forecasts aid the land management and fire control agencies in protecting life and property during wildland fires, hazardous fuels reduction and rehabilitation and restoration of natural resources. Spot forecasts are also issued for hazardous materials incidents, marine incidents, search and rescue response and other threats to public safety. Spot forecasts are available anytime of the day, week or season and are considered one-time requests which are not routinely updated.

NWS Buffalo will provide spot forecasts upon request of any federal, state, tribal or local public safety official who represents the spot forecast is required to support a wildland fire or fire management activities, essential to public safety or in support of Homeland Security Presidential Directive #5 (HSPD 5).

Requests for or retrieval of completed Spot Forecasts should be made through the NWS National Spot Forecast Request web page <http://www.weather.gov/spot/> Further details on how to complete a spot request can be found in the NWS Buffalo Product & Service Guide.

Special Services

HYSPLIT Trajectories

The HYSPLIT (Hybrid Single-Particle Lagrangian Integrated Trajectory) model is a model which determines trajectories for particles at a given height above ground level. The HYSPLIT trajectories can be used for many purposes including but not limited to HAZMAT and smoke dispersion. These are available to be sent along with the spot forecast if desired. More details and an example can be found in the NWS Buffalo Fire Weather Product & Service Guide.

To utilize this feature, simply check **Yes** in the NOAA Hysplit Model Box of the spot forecast request form. An automated trajectory model run will then be emailed to the included email address or addresses on the request web page.

Incident Meteorologist Request

The NWS maintains a cadre of trained Incident Meteorologists (IMETs) per NWS Instruction 10-402. <http://www.nws.noaa.gov/directives/sym/pd01004002curr.pdf> IMETs are available for on-site or off-site decision support services for wildfires or other events that threaten life or property. All requests for IMET support from federal, state, tribal or local government emergency response agencies will be requested through the NWS National Fire Weather Operations Coordinator (NFWOC).

Decision Support Services

For non-wildfires such as local prescribed burns across western or north-central New York, request for on-site or off-site forecasting service can be made to the Buffalo National Weather Service Office. The fire weather program leader or another assigned staff member if available and approved by management would then provide the requested service.

Wildland Fire Agency Responsibilities

Regional Support and Predictive Services

Interagency fire meteorologists at the Eastern Area Coordination Center combine forecast information from NWS and other sources into area-wide summaries and briefings. These meteorologists work in conjunction with Fire Intelligence to form the Predictive Services Group, which produce integrated fire weather/fire danger assessments for the entire NIFC Eastern Area.

The intent of Predictive Services is to provide strategic, regional and sub-regional information to assist in the preparedness, movement and allocation of firefighting resources. SWCC Predictive Services is the provider of fire danger and potential forecasts within the Eastern Area beyond the next day NFDRS forecasts provided by the NWS.

Predictive Services Outlooks:

http://gacc.nifc.gov/eacc/predictive_services/outlooks/outlooks.htm

- Area-Wide Fire Weather Outlook Maps for Day 1 and 2
- 7-Day Significant Fire Potential Outlook
- Weekly Outlook
- Monthly and seasonal fire potential outlooks
- Fire Potential Videocast

http://gacc.nifc.gov/eacc/predictive_services/weather/EA_Videocast/EA_Videocast.mp4

New York State Support

New York State DEC Predictive Services issues a statewide Fire Danger Rating Area Risk Forecast covering Day 2. This forecast can be found here:

<http://www.dec.ny.gov/lands/68329.html>

Program Management

The natural resource agencies will oversee the fire weather observation program including Remote Automatic Weather Stations (RAWS) and NFDRS, including the siting and maintenance of the observing equipment, fire weather training of their personnel, and the proficiency of their personnel in the use of the NWS Spot software.

Monitoring, Feedback and Improvement

Natural resource agencies will monitor the quality and timeliness of NWS fire weather products, and provide feedback to the NWS in order to improve services to the agencies.

Feedback on spot forecasts is required to validate forecasts and improve accuracy and should ideally be submitted within a day or two of the burn or incident. The type of feedback preferred is the character of temperature, humidity and wind affecting

the burn or incident period. At a minimum, Maximum temperature, Minimum relative humidity and Significant afternoon winds (speed and direction) should be included.

Acceptable Methods of Providing Spot Forecast Feedback preferably within a day or two:

- 1) Enter Feedback on spot forecast page. Simply type in your feedback into the box near the bottom of the forecast and click Send Feedback. (**Preferred method**)
- 2) Phone call to NWS Buffalo
- 3) Faxed copies of fireline (belt weather) observations
- 4) Faxed or electronically transmitted copies of hourly data from an on-site portable weather station
- 5) Notification of deployment of a portable GOES telemetered RAWS, so NWS can access and download the necessary data

Technology Transfer

The natural resource agencies may, from time to time, advise the NWS of new technologies being implemented to monitor meteorological or fuel parameters, or to improve communication, coordination, training or reference. Natural resource agency personnel may, with prior arrangement, visit an NWS office to acquire knowledge of NWS technologies used in the monitoring of weather, or the preparation of products.

Agency Computer Resources

Internet will be the primary method of obtaining the Fire Weather Forecast, Red Flag Warning, Fire Weather Watch, and for both requesting and receiving a Spot Forecast. As a backup method, a request can be made to the NWS for a product to be faxed to the customer agency. NFDRS observations will be entered into WIMS, and forecasts and calculations based on these observations will be received by WIMS, or by internet via a WIMS website.

Fire Weather Observations

NFDRS observation stations provide the specialized weather observations for fire weather forecasts, wildfire control and suppression, and various other land management operations. Stations may either be manned sites operated by land management agencies, or unmanned RAWS maintained by any of the federal or state land management agencies in the area.

Sensor failure will often result in erroneous or (at best) suspicious values. If the NWS becomes aware of such a situation, it is prudent to contact the station owner and vice versa. It is that stations owner's responsibility to make sure that their station is and remains in good working order and that repairs are made in a timely manner. Owners of NFDRS stations should correct any errors in their respective observations.

Joint Responsibilities

Joint responsibilities include the following:

Training

The responsibility of training natural resource agency employees will be that of the agencies themselves. However, the NWS will be available to assist when requested to do so.

Meetings between the NWS offices and the natural resource agencies

At least one statewide meeting hosted by the NWS is normally attempted each year, usually coordinated by the NWS State Liaison Office in Albany. NWS Buffalo will also conduct a local users meeting each year.

Maintenance and Revision of the Annual Operating Plan

The AOP should be revised each year by the end of January, with cooperation and participation from NWS Buffalo and each natural resource agency. NY changes discussed in the local users meeting will then be implemented into a revised AOP.

Workplace Visits

Natural resource agencies and the NWS should collaborate on familiarization of personnel in each other's fields of expertise, operations and equipment. Visits to offices and work centers, as well field job sites can meet part of these requirements.

Service Evaluation

Services provided by the NWS, and delivery of observations and information from the natural resource agencies to the NWS in support of these services, shall be under constant evaluation by both parties.

Incident Response

The NWS is the provider of Incident Meteorologists (IMETs). Costs incurred by NWS in providing IMET support will be borne by the requesting agency. The user agency is responsible for providing adequate shelter to allow the equipment and IMET to function efficiently. This would include a location free of excessive dust, heat and moisture with protection from wind and other elements.

Effective Dates of the AOP

The effective dates of this Annual Operating Plan will be from January 1 through December 31 of the current calendar year. This plan will be subject to review and revision by all signatory parties each year, or more frequently as operations warrant. This plan will be available on the NWS Buffalo fire weather webpage. A copy of this plan will also be sent to NWS Eastern Region Headquarters by January 31 of the current year. Eastern Region Headquarters will forward a copy of the plan to NIFC and NWS Headquarters.

Signature Page

Signed _____
Shawn Smith
Fire Weather Program Leader
NWS Buffalo

Signed _____
Judith Levan
Meteorologist-in-Charge (Acting)
NWS Buffalo